

USSN 10/629,364
Atty. Docket No. 2001-0138-03

1.-24. (cancelled)

25. (currently amended) A process for producing an elongated electrode for use in a gas discharge laser with a lasing gas mixture comprising fluorine comprising the steps of:

- a) using an elongated electrode structure comprised of one or more electrical conducting materials and having a long dimension of at least 50 centimeters and a width of at least 3 centimeters.
- b) creating a porous insulating layer on a portion of the elongated electrode, the portion defining a discharge region having a width of at least 3 millimeters the porous insulating layer having sufficient porosity to pass sufficient electrons to provide an effective discharge between the electrode and a second electrode and the porous insulating layer inhibiting chemical reaction between the electrode and fluorine.

26. (original) A process as in Claim 25 wherein the one or more electrically conducting materials comprise a lead rich brass having a lead content of greater than 1 percent, and the step of creating the porous electrical insulating layer comprises operating the electrode in a fluorine containing laser gas to permit a porous insulating layer to build up on the lead rich brass.

27. (original) A process as in Claim 25 wherein the step of creating the porous insulating layer comprises spreading insulating particles on the discharge region of the elongated electrode structure.

28. (original) A process as in Claim 25 wherein said step of creating the porous insulating layer comprises the steps of:

- a) mixing insulating particles in a molten metal to produce a discharge section of the elongated electrode the section

USSN 10/629,364
Atty. Docket No. 2001-0138-03

comprising a filler metal and the insulating particles,

b) operating the elongated electrode in a fluorine containing laser gas environment to permit a portion of the filler metal to sputter away leaving a porous insulating layer covering the discharge region.

29.-30. (cancelled)

31. A process as in Claim 25 wherein the step of creation of porous insulating layer includes the substeps of:

a. creating a plurality of nucleation sites on the discharge surface;

b. operating the electrode in a laser containing fluorine gas so as to permit the porous insulating layer to grow on the discharge surface.

32.-52. (cancelled)